Stormwater Management Program

The Sumter County Stormwater Program Service has continued to expand its' services to the citizens of Sumter County in FY 15. The stormwater program has continued to follow the recommendations of the 2012 "Sumter County Stormwater Needs and Assessment Report" prepared by AMEC Foster Wheeler. FY 2015 saw a continued expansion of the Stormwater Pipe Inspection Program while implementing a new Stormwater Pipe Repair Program to fix the deficient stormwater pipes identified in the inspection program from the previous years. Also, the existing Canal Cleaning Program, Collection of As-built Stormwater Data , Development of Watershed Management Plans, The Lake Miona Fisheries and Submerged Aquatics Improvement efforts and the implementation of various stormwater retrofit projects highlighted the increased efforts this past year.

Stormwater Pipe Inspection and Pipe Repair Programs

The stormwater program increased its closed circuit television (CCTV) stormwater pipe inspections in FY 15 in The Villages. The inspection program increased from 13,430 feet of stormwater pipe inspected in FY 13 and 23,370 feet of stormwater in FY 14 to 63,300 feet of stormwater pipe inspected in FY 15. This included approximately 8,200 of stormwater pipes that were dewatered and desilted to allow the inspections from FY 13 and FY 14. Pipe repairs and associated costs totaled approximately $471,900 in FY 15 not including emergency repairs which totaled an additional $36,266. These repairs included mechanical repair sleeves, pressurized crack grouting, internal band seals, sectional repairs, CCCP lining repairs, CIPP slip lining repairs, pipe section replacement repairs and desilting. FY 16 is budgeting for approximately 82,500 feet of pipe inspections in The Villages.

Figure 1-Emergency Stormwater Pipe Repair at San Pedro Dr

The FY 15 pipe CCTV pipe inspections revealed two major stormwater pipe deficiencies at two locations that required immediate repair. The first repair was to fix a damaged pipe that was missing a top section of stormwater pipe located below Morse Boulevard. Since the pipe was missing a section at the top of the pipe, the repair was considered a high priority due to the possibility of the roadway collapsing from the missing section. The County contracted with Pave All contractors for the immediate repair at a cost of $16,923.

Similarly, the second emergency repair in FY 15 was located at 312 San Pedro Drive and also featured a missing section of pipe which could have caused the street to collapse. The County contracted with Pave All contractors for the immediate repair at a cost of $19,343.

Figure 2 - CCTV Inspection Revealing Damaged Stormwater Pipe under San Pedro Drive

Figure 3 –County Assisting Altair Environmental in Desilting Efforts on Clogged Stormwater Pipe and Inlet Box for C-466A

Canal Maintenance Program

The South County Canal System consists of manmade canals leading to and from Gant Lake to the Little Withlacoochee River for flood control, grade stabilization and water conservation. The canal system was originally constructed by the former Soil Conservation Service (SCS) in the mid to late sixties early seventies primarily for flood control. The operation and maintenance of the system was transferred to the Southwest Florida Water Management District (SWFWMD) after construction completion. The South County Canal System consists of canals, cross over bridges, control structures and secondary structures. The SWFWMD historically maintained the canals and control structures, but recently retained only the maintenance responsibility for the control structures while transferring maintenance responsibilities of the canals to the County. As a result, the County inherited the maintenance responsibilities for the cross over bridges and canals and secondary structures. Staff applied for and received a letter of exemption for the maintenance activities prior to beginning the multi-year work effort from the SWFWMD. As a result, the County now has been begun the task of maintaining nearly 15 miles of canals. The canals typically have a 20-foot maintenance easement on both sides of the canal for maintenance access. This easement is overgrown in many areas and fenced off by private homeowners in, due

to the lack of maintenance over the years. This period of inactivity on the canals required the County to send out letters to adjacent property owners explaining the effort and the need to re-establish the existing maintenance easement granted in the early seventies.

In FY 14 the storm water service contracted out for the first year of cleaning and maintenance of canal "G" for $74,000 through TSI Disaster LLC. The canal was 19,340 feet in length and had not been maintained for many years. This equates to $3.83/ foot. This second year (FY15), the canal "C" cleaning and maintenance effort was contracted through Florida Natives Nursery, LLC for $71,355. The canal totaled 18,316 feet in length which corresponds to approximately $3.90/foot.

Figure 4 - Canal "C" Cleaning Efforts Work in Progress in South Sumter

Development of Watershed Management Plans

An existing Cooperative Funding Initiative (CFI) contract between Sumter County and the Southwest Florida Water Management District (SWFWMD) continued in FY 15 for the ongoing multi-year Jumper Creek Watershed Management

Plan. The CFI program results in a 50/50 split on the cost of the watershed management plans between the County and the SWFWMD barring any additional grants. The previous CFI project, Big Prairie/Gant Lake watershed management plan study was concluded in September 2014. The watershed management plan contain revised topography and land use and in support of a hydrologic and hydrodynamic model which more accurately defines the floodplain limits with base flood elevations delineated. The revised floodplain data from the Big Prairie and Gant Lake watershed management plans has been sent to the Federal Emergency Management Agency (FEMA) for a letter of physical map revision (LOMR) to the affected FEMA Flood Insurance Rate Maps (FIRM) in the coming months. This revision will provide for elevations of the 100-year floodplain "A-Zones" which current maps do not delineate in many areas. Also, an alternative analysis for future stormwater retrofit projects was performed for both watersheds showing the ten most needed flood improvements for structures and roadways prone to flooding. These flood improvements identify the fixes needed to prevent roadway and structural flooding for the County's defined level of service (LOS) for flooding. Another deliverable from the watershed management plans is a complete stormwater structure as-built inventory. This data is used in the GIS stormwater layer inventory map being developed in the County's GIS based system. Also, another cooperative funding initiative between Sumter County and the SWFWMD was executed and began in FY 13 for the Jumper Creek Watershed Management Plan. This study has continued into FY 15 and will conclude in December of FY 16. The Big Prairie/Gant Lake watershed management plan total cost was approximately $933,000, of which the County paid approximately $156,000 through the CFI program with the SWFWMD and matches from the Florida Department of Environmental Protection (FDEP). The Jumper Creek Watershed management plan will cost approximately $1,068,184 of which the County will spend $534,092 over the four year period as part of the 50% cooperative funding program match with the SWFWMD. The County spent approximately $64,540 on this project in FY 14 and $139,700 in FY 15. Similarly, this project will also result in a complete inventory of structures in the Jumper Creek watershed, alternative analyses for areas not meeting the County's level of service for future retrofit and revised floodplain maps which will also be sent to FEMA in the form of LOMR application.

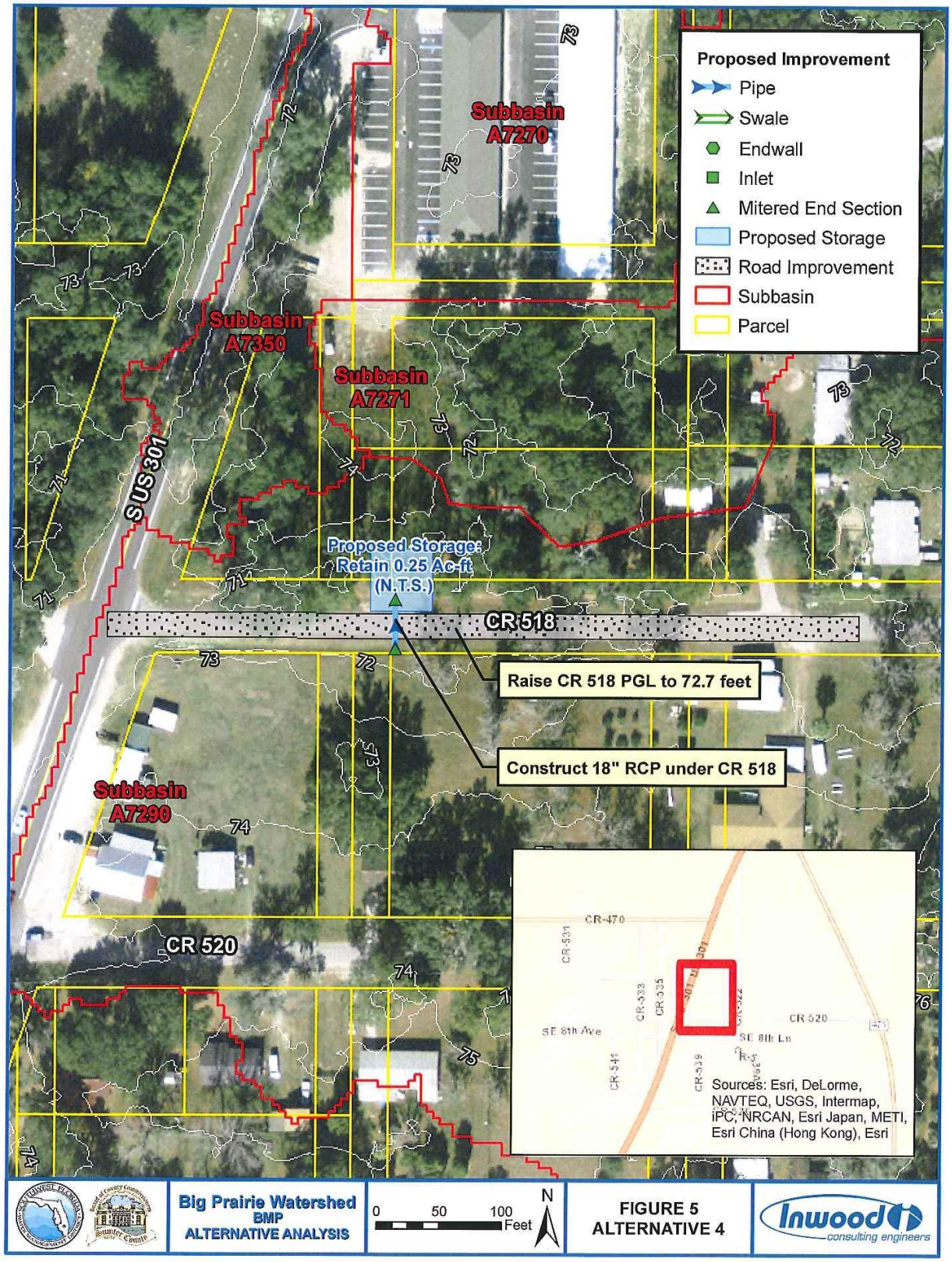

Figure 5 -Alternative Analysis for CR 518 from the Big Prairie Watershed Management Plan

Collection of Stormwater Structure Data

Stormwater data collection continued in FY 15 and consisted of adding stormwater structure inventories for the Big Prairie and the Gant Lake Watersheds. The inventories were then imported in to the existing geographical Information System (GIS) database. These inventories were provided as a deliverable to the watershed management plans for Big Prairie and Gant Lake which were finished earlier this year. The inventory survey data includes pictures, locations, elevations, dimensions, material composition and a description of the structure condition. The inventories are currently in the process of being converted into a format compatible with the Cityworks software. The Cityworks software is a GIS based software that will contain the stormwater layer of surveyed as-built structures and their respective attributes. This database and associated data will then be available as a county wide map available to County staff to use in the field for structure locations, inspections, maintenance, reporting and ultimately for future budgeting needs.

Lake Miona Fisheries and Aquatic Macrophyte Management Plan

Sumter County has partnered with the Tourist Development Council (TDC) for the last two years and has provided matching funds to study and implement improvements to the bass fisheries and submerged aquatics in Lake Miona. The County has contracted with Breedlove, Dennis and Associates (BDA) for a fisheries improvement studies during FY 14 and FY 15 in an effort to improve the fishing experience on Lak e Miona. The report focuses on continued monitoring of the lake's water quality, lake vegetation index (LVI), weight distributions of bass and other fishes, a possible small bass harvesting program in the future (pending public interest and FFWCC pending rule change), and the creation of an adaptive submerged aquatic macrophyte management plan. The adaptive submerged vegetation management plan has focused on reducing invasive or undesirable lake vegetation in favor of promoting more quality vegetation with respect to fish habitat and foraging needs in addition to providing enhanced access for fishing by the creation of "ambush lanes" around the perimeter of the Lake were the submerged vegetation is the greatest. Continued creel data, fisherman interviews, water quality sampling, and public input on fisheries goal preferences will be collected by both comment cards in a kiosk and one on one interviews' with anglers in an effort to prioritize future fishing goals on the lake. Recommendations from the FY 14 report were implemented in FY 15 with the creation of the ambush lanes and the spraying of undesirable aquatic vegetation. Fish sampling through electroshocking will be performed in FY 16 to gauge the effectiveness of the improvements in increasing the overall weight of the bass population as compared to the electroshocking results and associated relative weight of the largemouth bass as measured and calculated in FY 14. The County's portion of the match funds with the TDC for the report totaled $17,061 in FY 15.

Also, the County has contracted with AMEC Foster Wheeler to design and permit a stormwater retrofit for the parking lot at Lake Miona. Stormwater currently drains from the parking area down the ramp to the Lake without treatment. The retrofit project will collect as much stormwater as possible by gravity from the parking lot and route the stormwater to the retention/detention basin for treatment prior to discharge to the Lake. The County has spent approximately $20,480 for the survey, engineering and permitting for the parking lot retrofit for stormwater. Construction is planned in FY 16 and the cost is estimated at $57,000 for construction and inspection services.

Figure 6 - Lake Miona Aquatic Vegetation

Stormwater Retrofit Projects

The Sumter County stormwater service constructed two engineered retrofit projects in FY 15. These projects were developed by staff by observations and citizens complaints.

C 575/CR 622C

The County contracted with Pave-Rite contractors on this job and spent $73,200 on this stormwater retrofit project in FY 15. This project was designed to eliminate stormwater runoff from sheet flowing across CR 622C and adjacent properties and provide a dedicated flow path for the stormwater runoff located on County right-of-way. The job consisted of installing pipes, inlets and ditches and has reduced flooding to the road and residents.

CR 647/CR 657

The County spent $175,480 on this stormwater improvements retrofit project in FY 15. This project was necessitated by the addition of asphalt to the western end of CR 647 and flooding at the south end of CR 657. The project consisted of new inlets, pipes, ditches and a pollution treatment baffle box prior to discharge to the river. A new easement was obtained to pipe the runoff to the river thus removing flooding concerns on a residence at the southwest corner of CR 657.